AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for production of three-dimensional bodies by successive fusing together of selected areas of a powder bed, which parts correspond to successive cross sections of the three-dimensional body, ~~which~~ the method ~~comprises the following method steps~~comprising:

~~application of~~applying powder layers to a work table,

determining an operating scheme for the powder layer,

supplying energy from a radiation gun, according to ~~an~~ the operating scheme, ~~determined for the powder layer~~ to said selected area within the powder layer, and

fusing together that area of the powder layer selected according to said operating scheme for forming a cross section of said three-dimensional body, a three-dimensional body being formed by successive fusing together of successively formed cross sections from successively applied powder layers, ~~characterized in that~~

where fusing includes dividing said selected area ~~is divided~~ into a plurality of smaller part areas which each comprise an inner area I and an edge R and said determining an operating scheme includes determining priority for treating said plurality of smaller part areas such that heating of the selected area takes place in a relatively homogeneous way.

2. (Currently Amended) The method as claimed in claim 1, ~~characterized in that~~where fusing further includes

fusing the inner ~~area~~ areas I of a set of adjacent part areas ~~is fused together~~ in a first process step, ~~after which~~and

connecting the adjacent part areas by fusing the edges R belonging to said adjacent part areas ~~are fused together and connect said part areas~~ in a second, ~~subsequent~~ process step, said second process step being performed after said first process step.

3. (Currently Amended) The method as claimed in claim 1 ~~or 2, characterized in that the operating scheme is arranged so as to determine the priority for treating said plurality of smaller~~

~~part areas~~where said priority for treating is determined with the aid of a random number generator.

4. (Currently Amended) The method as claimed in claim 1, ~~characterized in that~~where fusing further includes

fusing said edges ~~are fused~~ together in a first process step for a number of consecutive powder layers, and

fusing ~~after which~~ the inner areas of said consecutive powder layers ~~are fused together~~after fusing said edges in a common second process step for said consecutive powder layers.

5. (Currently Amended) The method as claimed ~~in any one of the preceding claims~~in claim 2 or 4, ~~characterized in that~~where fusing the inner areas includes fusing said inner areas ~~are fused~~ together in the course of a movement pattern for the focal point of the beam of the radiation gun ~~which comprises~~, said movement pattern comprising a main movement direction and an interference term which is added to said main movement direction and has a component in a direction at right angles to the main movement direction.

6. (Currently Amended) The method as claimed in ~~any one of the preceding claims~~claims 2 or 4, ~~characterized in that~~where fusing said edges ~~are fused~~includes fusing said edges together in the course of a mainly rectilinear movement of the beam of the radiation gun.

7. (Currently Amended) The method ~~as claimed in any one of the preceding claims~~according to claim 1, ~~characterized in that~~the method further including calculating an energy balance ~~is calculated~~ for at least one part area within each powder layer, ~~it being determined in the calculation~~said calculating including determining whether energy radiated into the part area from ~~the~~ surroundings of the part area is sufficient to maintain a defined working temperature of the part area.

8. (Currently Amended) The method as claimed in claim 7, ~~characterized in that~~where said supplying energy includes supplying, in addition to said energy for fusing together the part area, energy ~~for heating~~that heats the part area to a defined working temperature ~~is supplied~~ if the result of the energy balance calculation is that sufficient energy for maintaining an intended working temperature of the part area is not present~~, a defined working temperature of the part area then being achieved~~.

9. (Currently Amended) The method as claimed in claim 7 ~~or 8, characterized in that the~~where calculating an energy balance includes calculating an energy balance for each powder layer ~~is calculated~~ according to Ein(i) =Eout(i) + Eheat(i), where Ein(i) represents energy fed into the part area, Eout(i) represents energy losses through dissipation and radiation from the part area, and Eheat(i) represents energy stored in the part area.

10. (Currently Amended) The method as claimed in ~~any one of claims 7-9~~claim 7, ~~characterized in that an~~where calculating an energy balance ~~is calculated~~includes calculating an energy balance for each of said part areas.

11. (Currently Amended) An arrangement for producing a three-dimensional product by successive fusing together of successively formed cross sections of said product, ~~which~~ the arrangement ~~comprises~~ comprising:

a work table on which said three-dimensional product is ~~to be~~ built up,

a powder dispenser ~~which is arranged so as to~~that ~~distribute~~ forms a powder bed by distributing a thin layer of powder on the work table ~~for forming a powder bed~~,

a radiation gun ~~for delivering~~that delivers energy to the powder, thereby fusing the powder together ~~of the powder then taking place~~,

~~means for guiding~~a beam guide that guides the beam emitted by the radiation gun over said powder bed ~~for forming~~such that radiation from said gun forms ~~a~~ one of the cross sections of said three- dimensional product by fusing together parts of said powder bed, and

a control computer ~~in which~~that stores information about the successive cross sections of the three-dimensional product ~~is stored~~, which cross sections build up the three- dimensional product,

where the control computer ~~is intended to control said means for guiding the radiation gun over the powder bed~~divides at least a selected area of each cross-section into a plurality of smaller part areas which each comprise an inner area I and an edge R, and controls the radiation gun and beam guide according to an operating scheme for forming ~~a~~ each cross section of said three-dimensional ~~body,~~product by determining a priority for delivering energy to said plurality of smaller part areas such that heating of the selected area takes place in a relatively homogeneous way ~~said three-dimensional product being formed by successive fusing together of successively formed cross sections from by the powder dispenser, characterized in that the control computer is arranged so as to divide said selected area into a plurality of smaller part areas which each comprise an inner area I and an edge R~~.

12. (Currently Amended) The arrangement as claimed in claim 11, ~~characterized in that~~wherein the control computer controls the radiation gun and beam guide such that the radiation gun ~~is arranged so as to fuse~~fuses together the inner area I of a set of adjacent part areas in a first process step, and ~~after which~~connects said part areas by fusing together said edges R ~~are fused together and connect said part areas~~ in a second, subsequent process step.

13. (Currently Amended) The arrangement as claimed in claim 11 ~~or 12, characterized in that the operating scheme is arranged so as to determine the priority for treating said plurality of smaller part areas with the aid of~~where the control computer further includes a random number generator configured such that the computer determines the priority for treating based on outputs from said random number generator.

14. (Currently Amended) The arrangement as claimed in claim 11, ~~characterized in that~~where the control computer controls the radiation gun and beam guide such that the radiation gun fuses said edges ~~are fused~~ together in a first process step for a number of consecutive

powder layers, ~~after which~~and then fuses the inner areas of said consecutive powder layers ~~are fused~~ together in a common second process step for said consecutive powder layers.

15. (Currently Amended) The arrangement as claimed in ~~any one of claims 11-14, characterized in that~~claims 12 or 14, where the control computer controls the radiation gun and beam guide according to the operating scheme ~~is arranged so as to guide~~such that the beam guide guides the focal point of the beam of the radiation gun within said inner areas using a movement pattern which comprises a main movement direction and an interference term which is added to said main movement direction and has a component in a direction at right angles to the main movement direction.

16. (Currently Amended) The arrangement as claimed ~~in any one of claims 11-15~~in claims 12 or 14, ~~characterized in that~~where the control computer controls the radiation gun and beam guide according to the operating scheme such that the radiation gun ~~is arranged so as to fuse~~ fuses together said edges in the course of a mainly rectilinear movement of the beam of the radiation gun ~~according to an operating scheme determined by the control computer~~.

17. (Currently Amended) The arrangement as claimed in ~~any one of claims 11-16~~claim 11, ~~characterized in that~~where the control computer ~~is also arranged so as to calculate~~calculates an energy balance for at least one part area within each powder layer, ~~it being determined in~~and determines, based on the calculation, whether energy radiated into the part area from the surroundings of the part area is sufficient to maintain a defined working temperature of the part area.

18. (Currently Amended) The arrangement as claimed in claim 17, ~~characterized in that~~where the control computer ~~is arranged so as to control said operating scheme for supply of~~,controls the delivery of energy to the powder according to the operating scheme such that, in addition to ~~said~~ energy for fusing together powder layers, the radiation gun delivers energy for heating the powder layer if the result of the energy balance calculation is that the operating

scheme is not providing sufficient energy for maintaining an intended working temperature of the part area, a defined working temperature of the part area then being maintained.

19. (Currently Amended) The arrangement as claimed in claim 17 ~~or 18~~, ~~characterized in that the control computer is arranged so as to calculate~~where the control computer calculates the energy balance for each powder layer according to Ein(i) = Eout(i) + Eheat(i) where Ein(i) represents energy fed into the part area, Eout(i) represents energy losses through dissipation and radiation from the part area, and Eheat(i) represents energy stored in the part area.

20. (Currently Amended) The arrangement as claimed in ~~any one of claims 11-19~~claim 17, ~~characterized in that~~where the control computer ~~is arranged so as to calculate~~calculates an energy balance for each of said part areas.

21. (Currently Amended) The arrangement as claimed in ~~any one of claims 11-19~~claim 11, ~~characterized in that~~ the arrangement ~~also comprises~~further comprising ~~means for sensing~~a temperature sensor that senses the temperature distribution of a surface layer located in the powder bed.

22. (New) The arrangement of claim 11, where the radiation gun includes at least one high-energy laser.

23. (New) The arrangement of claim 11, where the radiation gun is an electron gun.